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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,511	06/23/2003	Juergen Ramm	080310.47624D1	9833

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EXAMINER

LUND, JEFFRIE ROBERT

ART UNIT PAPER NUMBER

1763

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/600,511

Applicant(s)

RAMM ET AL.

Examiner

Jeffrie R. Lund

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-26,29,30,32,33 and 35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-26,29,30,32,33 and 35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 24-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 24 is indefinite because it depends on claim 25, which in turn depends on claim 24. Examiner believes that there was a typographical error and "25" should have read "35".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 24-26, 29, 32-33, and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Ushikawa, US Patent 5,225,378.

Ushikawa teaches a stand alone processing chamber that includes a plasma discharge section 20c; a gas supply connected to a gas tank 16; and a workpiece holding arrangement 12 holding a disk or plate shaped workpiece 11. The workpiece holding arrangement includes a magazine (boat) with a plurality of slits stacked one above another, and the slits hold the workpieces in a plane parallel to and separated from each other at a distance.

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The particular type of gas used, and type of substrate treated are process limitations rather than an apparatus limitation. The recitation of a particular type of gas does not so limit an apparatus claim, see *In re Casey*, 152 USPQ 235; *In re Rishoi*, 94 USPQ 71; *In re Young*, 25 USPQ 69; *In re Dulberg*, 129 USPQ 348; *Ex parte Thibault*, 164 USPQ 666; and *Ex parte Masham*, 2 USPQ2d 1647; and "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." *In re Young*, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). This rejection is based on the fact that the gas tank 16 taught by Ushikawa has the inherent capability of being used in the manner intended by the Applicant to treat the desired workpiece.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 24-26, 29, 30, 32, 33 and 35 are rejected under 35 U.S.C. 103(a) as being obvious over Ramm et al, US patent 5,384,018 in view of Ushikawa, US patent 5,225,378.

Ramm et al teaches a stand alone processing chamber that includes a low

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voltage hot cathode plasma discharge section 1; a gas supply 40 for supplying argon or hydrogen gas; and a workpiece holding arrangement 38 holding a workpiece.

Ramm et al differs from the present invention in that Ramm et al does not teach that the workpiece holding arrangement includes a magazine (boat) with a plurality of slits stacked one above another, the slits hold the workpieces in a plane parallel to and separated from each other at a distance, and the slits are open to the interior of the vacuum chamber; or the disk-shape workpieces with directly bondable surfaces.

Ushikawa was discussed above and includes a workpiece holding arrangement includes a magazine (boat) with a plurality of slits stacked one above another, the slits hold the workpieces in a plane parallel to and separated from each other at a distance, and the slits are open to the interior of the vacuum chamber.

The specific workpiece worked on is a method limitation, and it has been held that "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." *In re Young*, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

The motivation for using the workpiece holding arrangement of Ushikawa in the apparatus of Ramm et al is to provide a workpiece support as is required by Ramm et al, but is only generically described. The use of boats (cassettes, magazines or the like) for holding a plurality of workpieces in a processing chamber is well known in the art,

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and allows for a large number of workpieces to be treated at the same time, thereby increasing throughput and process efficiency.

The motivation for generating workpieces with directly bondable surfaces in the apparatus of Ramm et al is to generate workpieces with directly bondable surfaces.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the workpiece holding arrangement of Ushikawa in the apparatus of Ramm et al, and to produce the desired workpiece.

7. Claim 30 is rejected under 35 U.S.C. 103(a) as being obvious over Ushikawa, US patent 5,225,378 in view of Ramm et al, US patent 5,384,018.

Ushikawa was discussed above.

Ushikawa differs from the present invention in that Ushikawa does not teach that the plasma gas activator 20c is a hot cathode.

Ramm et al was discussed above and includes a hot cathode plasma gas activator.

The motivation for replacing the plasma gas activator of Ushikawa with the plasma gas activator of Ramm et al is to provide an alternate and equivalent plasma gas activator to activate a working gas as taught by Ramm et al.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the plasma activating means of Ushikawa with the hot cathode of Ramm et al.

Response to Arguments

8. Applicant's arguments, see page 8 paragraph 3, filed February 25, 2005, with

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respect to the 102 rejection of claims 23, and 29-33 over Ramm et al have been fully considered and are persuasive. The rejection has been withdrawn.

9. Applicant's arguments filed February 25, 2005 have been fully considered but they are not persuasive.

In regard to the argument that Ramm et al is not a stand alone chamber, but part of an inline chamber, the examiner disagrees. Ramm et al is not disclosed as part of an inline chamber. The examiner concedes that it could be connected as part of an inline system having a single chamber, but the system could also be connected to a cluster tool with multiple chambers, or be a stand alone chamber connected to an inert atmosphere transfer system. Either way, this is a use of the system as a whole and does not limit the structure of the system.

In regard to the arguments directed to the use of a wafer boat, the examiner disagrees. Wafer boats are well known in the art and frequently used in batch treatment of wafers as taught by Ushikawa. The "shadow effect" is well known in the art and solved simply by optimizing the spacing between the workpieces, and is not considered to be a problem by one of ordinary skill in the art.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

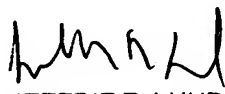
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MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (6:30 am-6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JEFFRIE R. LUND
PRIMARY EXAMINER